

## CLAIMS

1. A vehicle mounted crash attenuator comprising:  
a first bay comprising a front end adapted for mounting to a vehicle and a back end;  
5 a second bay comprising a front end and a back end;  
a rotational joint interconnecting the back end of the first bay with the front end of the second bay; and  
an actuator coupled with the second bay to move the second bay between a deployed position, in which the first and second bays are aligned horizontally, and a retracted position, in which the second bay is rotated about the rotational joint by a rotation angle greater than  $90^\circ$  with respect to the deployed position, thereby raising the second bay above the first bay.

2. The invention of Claim 1 wherein the back end of the second bay comprises a lower edge, wherein the rotational joint defines a rotational axis, wherein the first bay defines a plane passing perpendicular to a longitudinal axis extending between the front end and the back end of the first bay, and wherein the rotation angle is sufficiently greater than  $90^\circ$  such that when the second bay is in the retracted position, the lower edge is positioned on the same side of the plane as is the front end of the first bay.

3. The invention of Claim 1 wherein the back end of the second bay comprises a lower edge, wherein the lower edge is positioned at a height  $h$  when the second bay is rotated about the rotational joint by a rotation angle of  $90^\circ$ , and wherein the rotation angle is selected such that in the retracted position the lower edge is positioned at a height no greater than  $h$ .

4. The invention of Claim 1 wherein the second bay comprises a depth parameter  $a$  and a length parameter  $b$ , and wherein the rotation angle is no less than  $90^\circ + 2 \arctan(a/b)$ .

5. The invention of Claim 1 wherein the rotation angle is greater than 125°.

6. The invention of Claim 1 wherein the rotation angle is greater than 145°.

5 7. The invention of Claim 1 wherein the rotation angle is greater than 165°.

8. The invention of Claim 1 wherein the rotation angle is substantially equal to 180°.

10 9. The invention of Claim 1 wherein the rotation angle is greater than 180°.

10. The invention of Claim 1 wherein the first and second bays comprise respective first and second upper portions, wherein the first and second upper portions face upwardly when the second bay is in the deployed position, and wherein the first upper portion faces upwardly and the second upper portion faces downwardly, toward the first upper portion, when the bay is in the retracted position.

11. The invention of Claim 10 wherein the rotational joint is positioned adjacent the first upper portion.

20 12. The invention of Claim 1 further comprising a mounting arrangement secured to the front end of the first bay and operative to cantilever the first bay from a vehicle with the first bay in substantially a horizontal position, both when the second bay is in the deployed position and when the second bay is in the retracted position.

25 13. The invention of Claim 12 wherein the mounting arrangement accommodates rotation of the first bay around a substantially horizontal pivot axis.

14. The invention of Claim 1 wherein the second bay in the retracted position is positioned with the back end of the second bay adjacent the front end of the first bay.

5 15. The invention of Claim 14 wherein the second bay rests on the first bay when the second bay is in the retracted position.

16. The invention of Claim 1 wherein the first and second bays are both entirely disposed on the same side of a vertical plane disposed forwardly of and adjacent to the front end of the first bay, both when the second bay is in the deployed position and when the second bay is in the retracted position.

10 17. The invention of Claim 1 wherein the actuator comprises first and second pivots, wherein the first pivot is coupled with the back end of the first bay, wherein the second pivot is coupled with the back end of the first bay by a first link, and wherein the second pivot is coupled with the front end of the second bay by a second link.

15 18. The invention of Claim 17 wherein the actuator comprises a hydraulic cylinder extending between the first and second pivots.

20 19. The invention of Claim 1 wherein the actuator comprises a hydraulic cylinder, wherein the back end of the first bay comprises a pair of spaced, parallel plates, and wherein the hydraulic cylinder is received between the spaced, parallel plates both when the second bay is in the deployed position and when the second bay is in the retracted position.